

In the 'nineties then the West Indies had sunk from prosperity to poverty. I heard it publicly stated at a meeting in the City of London that annexation to the United States was the only remedy. On some of the islands the peasantry were clamouring for food. And so things might have remained but for Mr. Chamberlain, who has never hesitated to cut himself adrift from hide-bound prejudices, and, regardless of them, to apply a practical remedy to an evil.

In 1897, after obtaining from Parliament some temporary relief, he sent out a commission of inquiry, of which Sir Edward Grey was a member, and to which Sir Daniel Morris, then assistant director of Kew, was attached as secretary. The Imperial Department of Agriculture was established the following year, and Sir Daniel Morris left Kew to take up the duties of commissioner. In a recent paper before the Royal Colonial Institute (see *NATURE*, January 26) he has given a full, and I think extremely modest, account of what he was able to achieve. That paper will speak for itself. My purpose is to show how success flowed from the patient and persistent application of scientific method.

The first thing was to see if the sugar-content of the cane could be improved. Like many other plants subjected to long cultivation, it was believed to have lost the power of producing seeds. The Pacific Islands had been ransacked without much success to find more productive kinds which might have arisen possibly by bud-variation. The White Transparent cane, which is regarded as a standard in the West Indies, yields $2\frac{1}{2}$ tons of sugar to the acre. As sugar-content varies, like everything else, in individual plants, it was suggested from Kew that an improved race might be obtained by the process of chemical selection by which the Vilmorins worked up the beet to a high standard and maintain it at it. Some success was obtained, but it was evident that it would be extremely slow. By a stroke of good fortune a more rapid method was discovered. About 1888, Mr. Bovell and Prof. Harrison noticed the spontaneous occurrence of seedling sugar-canes in Barbados. It was found that the sugar-cane did actually produce seed, though in so small a quantity that it had been overlooked. As this at once opened the door to seminal variation and selection, the attention of the Colonial Office was at once directed by Kew to the importance of the discovery. The work was vigorously taken up by Sir Daniel Morris, and from 1908 onwards seedlings have been raised on a large scale by Mr. Bovell, and continuously selected from, as well as hybridised.

The result has surpassed expectation. One seedling cane, for example, B. 3405, gave an increase more than the standard of one ton an acre, representing a net profit of £8. Dr. Watts, the present commissioner, estimates that the benefit to Antigua and St. Kitts alone would more than cover the expense of the department. Much light has been thrown on the food requirements of the cane by carefully controlled experiment. As might be expected, potash is found to be favourable, but phosphatic manures to have involved monetary loss. Dr. Watts, who has been the pioneer in the promotion of central factories, has obtained an increased production of 40 per cent. more than the "Muscovado system." Nor is this all. The pests and diseases by which the sugar-cane, like all other cultivated plants, is attacked had to be combated. The Cambridge School was drawn upon for mycologists and entomologists. Mr. Maxwell-Lefroy achieved a notable success in discovering the means of controlling the destructive moth-borer.

The upshot is that a moribund industry has been given a new lease of life by bringing scientific method to bear upon it. *Laissez faire* would say that the

planters might have done it for themselves. But they did not, and, in fact, could not; a scientific campaign can no more be conducted by amateurs than a military one; the planters would not have known what positions to attack, nor could they have found the necessary men to do it nor directed them if they had.

Other industries had to be revived or created. Perhaps the most important of these was the production of Sea Island cotton with the generous help of the United States.

Lastly, but by no means least, an efficient system of rural education has been organised for the negro peasantry. I have no hesitation in saying that it is far in advance of anything which exists in the county where I am writing.

And thus Sir Charles Lucas, speaking from the perspective of the Colonial Office, is able to say that "while the eighteenth century saw the greatness of the West Indies, the nineteenth their distress, the twentieth century, he hoped, would witness their regeneration."

But this is not the end of the story. What has been accomplished in the West Indies has not been without its effect as an object-lesson elsewhere. It is to the credit of the Government of India that it has been, as already remarked, in advance of its time in pioneering work. It deprived China of the monopoly of tea, and, with the help of Kew, it has created the rubber industry of the East. But except as regards forestry it has effected little in intensive cultivation.

Canning claimed that he brought the New World to redress the balance of the Old. The Department of Agriculture for the West Indies has stimulated a new activity in the East, where some of its trained officers have found a larger scope for work. The recently published "Report of the Board of Scientific Advice for India" shows an awakeness and initiative which would have been looked for in vain a dozen years ago.

W. T. THISELTON-DYER.

PICTORIAL NATURAL HISTORY.¹

IN this little book the experience of the expert photographer has been combined with that of the keen naturalist; the result is a volume full of interest to all lovers of the countryside. The publisher, in a special preface, directs attention to the unusually large number of illustrations, which are exclusively reproductions of photographs taken by the author. Mr. Douglas English's success with his camera has been demonstrated on many previous occasions, and in "A Book of Nimble Beasts" he certainly gives us of his best. There are a number of pictures in this volume which are probably unique, and the reader's special attention is directed to the remarkable series of photographs illustrating the life-history of the sand-wasp (*Odynerus spinipes*).

The somewhat clumsy title is apt to give the impression that Mr. English's book deals in the main with the higher animals; this is by no means the case, and, indeed, some of the best pictures and chapters deal with the lower forms of life.

The value of the illustrations is increased by the fact that all are brought closely into connection with the chapters which they illustrate, a somewhat rare quality for a book of this type.

As in many recent books dealing with nature-study, Mr. English's text consists of a series of short stories, in the course of which the characteristic habits of different animals are brought out with the utmost faithfulness, and it is a pleasure for the reviewer to record the absence of any irritating zoological errors such as

¹ "A Book of Nimble Beasts." Bunny Rabbit, Squirrel, Toad and "those sort of people." By D. English. Pp. 319. (London: Eveleigh Nash, 1910.) Price 6s. net.

are so commonly met with in natural history books for the young. For the "Book of Nimble Beasts" addresses itself to children in particular, although it will undoubtedly appeal to their elders as well.

Mr. English's style is peculiar, and, although the majority of his stories are clearly narrated and read well, he occasionally gets carried away by his enthusiasm for odd words and still more odd constructions, so as to become almost unintelligible at times, as in the following passage from the last chapter on the pygmy shrew:—"He missed both shrews, who, dashing right and left of him, entangled him in double-minded purpose. Rested the pygmy, shrunk to a rigid wisp of apprehension, ear straining, muscle-tautened, behind a flimsy screen of bark." Such passages are fortunately rare, and the greater part of his text is marked by great lucidity. It is difficult to single out any particular story, among the best are "Bunny Rabbit" and "Spinipes the Sand-Wasp."



Fox Cub. From "A Book of Nimble Beasts."

The volume is tastefully bound, and both print and paper good. The "Book of Nimble Beasts" will prove a welcome gift for many a young naturalist.

ALCOHOL AND EUGENICS.¹

DURING the course of the year 1910 there issued from the Eugenics Laboratory of London University a memoir, entitled "A First Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring." The conclusion arrived at by the authors (Prof. Karl Pearson and Miss Elderton) was, broadly speaking, that parental alcoholism has no such influence. A result so sensational and so opposed to the opinions of many social workers was bound to arouse a storm of hostile criticism. It weakened one of the arguments against the excessive use of alcohol, and was interpreted as being a direct encouragement of vice.

(1) Prof. Pearson divides his critics into three

¹ (1) "A Second Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring." By Karl Pearson, F.R.S., and Ethel M. Elderton. Eugenics Laboratory Memoirs, XIII. Pp. 35. (London: Dulau and Co., Ltd., 1910). Price 4s.

(2) "A Preliminary Study of Extreme Alcoholism in Adults." By Amy Banington and Karl Pearson, F.R.S., with the assistance of Dr. David Heron. Eugenics Laboratory Memoirs, XIV. Pp. 55. (London: Dulau and Co., Ltd., 1910). Price 4s.

classes:—(1) Paid officials and platform orators of various temperance organisations; (2) economists (already answered in a supplement to the original memoir); (3) men with medical training who have written on the subject of alcohol. It is the last class who are dealt with in the first of the two papers now under consideration. Their attacks—for one can hardly apply the term criticism to much that they have written—are repulsed with considerable losses. It is shown that many of the errors attributed by them to Prof. Pearson and his fellow-author may be found in an aggravated form in the investigations quoted as evidence rebutting their conclusions. A sample of this evidence is itself examined and its complete worthlessness exposed. It consists of data obtained by Dr. MacNicholl in America, by Prof. Laitinen in Helsingfors, by Demme in Berne, also a curious piece of statistical work by Bezzola. The defence and counter-attack are admirably conducted,

the writing is clear, so concise as to make a summary impossible, and as entertaining as some of the controversial essays of Huxley. Yet while according this high praise to the memoir, we regret the necessity which compelled its production and thus diverted from its proper channel of original investigation any part of the energies of the Eugenics Laboratory staff.

It is with the greater satisfaction that we turn to (2), in which the relations between extreme alcoholism, mental capacity, education, occupation, and religious profession are discussed. The material on which the discussion is based consists of the published reports of the Langho, or Lancashire Reformatory, for the years 1905-10, supplemented by special information from Dr. F. A. Gill. Particulars as to the age, number of convictions, religion, and education of 333 female inebriates were obtained this way, and of the mental condition, physical state, and conduct of 207 among them. As the authors point out, results based on numbers so small are not in any way final; they may, however, suggest a solution of the problems, or at any rate indicate methods by which they can be profitably attacked. They certainly emphasise the need for the publication of good records of individual cases.

Perhaps the most pressing of the problems referred to is the relation of alcoholism to mental defect. The closeness of the association between the two is shown very clearly in the memoir. In table x. 223 female inebriates are classified with regard to their mental state. Of these only 37 per cent. were of normal intelligence; 53 per cent. were defective mentally; 6 per cent. very defective; and 3 per cent. actually insane. It is of the utmost importance therefore to determine whether it is the intellectual deficiency which leads to the alcoholism or the alcoholism which causes the deficiency. Light can be thrown on this point by measuring the correlations between education age and mental capacity, among the alcoholists. If it is the abuse of alcohol which causes a progressive degeneration of the intellect one would expect to find a sensible negative correlation between mental capacity and age—mental capacity diminishing as age increases. No such relation has been found. Allowing for differences of education the correlation between mental capacity and age is found to be 0.006 ± 0.047 , or quite negligible.